REMARKS

The present Response After Final Rejection Pursuant to 37 CFR 1.116 is submitted in reply to the Final Office Action of August 10, 2006. The Applicant respectfully requests entry of the following before reconsideration of the present Application as the Applicant believes that the following discussions place the present Application in condition for allowance.

Claims 14-27 are presently pending in the Application and claims 14-27 are rejected, under 35 U.S.C. § 103(a), as being unpatentable over Andre `717 in view of Musachio `285. The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the following remarks.

First considering the present invention is recited in independent claim 14 as presented herein above, the present invention is directed to a safety device for permanently monitoring a ground connection between a self-guided public transportation vehicle utilizing electrical energy and a ground connected metal guide rail to thereby prevent a risk of electrical shock to passengers. The vehicle runs on tires along the ground connected metal guide rail and is guided to follow the metal guide rail by means of at least one self-guiding assembly governing a movable directional assembly having at least one guide wheel traveling along the metal guide rail.

As recited in independent claim 14, the safety device is contained within the vehicle and includes at least two electrical contact elements that contact the grounded metal guide rail at two points along the metal guide rail wherein the contact points are separated from one another along the length of the metal guide rail and where the contact elements and the portion of the guide rail extending between the contact elements form an electrical safety loop that is supplied from a low voltage electrical generator on the vehicle and having terminals (BT+ and BT-) connected to the safety loop.

As also recited in claim 14, a current passage detector located on the vehicle is connected to the safety loop, detects a current flowing in the safety loop as a result of the low voltage electrical generator connected to the loop, and furnishes a signal indicating whether the safety loop is either open or closed, depending upon whether the electrical contact between the contact elements and the metal guide rail is satisfactory or unsatisfactory as indicated by the level of safety loop current detected by the current passage detector. When the electrical contact between the electrical contacts and the grounded metal guide rail is unsatisfactory, thus indicating that the vehicle ground connection to and through the guide rail is unsatisfactory, the signal from the current passage detector causes at least one safety element to cut off the

general electrical energy supply to the vehicle, such as by causing a cutoff switch to open or causing a pantograph connecting the vehicle to an overhead electrical energy supply to be lowered to break the contact to the energy supply.

It will be noted that claim 14 is amended to recite that the entire protection device resides within the vehicle. This amendment is fully supported by the specification, claims and drawings of the present Application as originally filed and does not add any new matter to or extend or alter the scope or subject matter of the present Application, the claims or the invention and thus, it is respectfully submitted, does not require a further search and/or further consideration on the part of the Examiner.

It will also be noted that the reasons why the present invention, as recited in the claims, is fully and patentably distinguished over the cited prior art are further expanded below and this response addresses each of the Examiner's statements regarding the prior art and the present invention as claimed in so far as the Applicant believes that the Examiner understood the remarks.

Now considering Andre '717, this reference relates to a system wherein an electrically powered rail guided vehicle includes guide wheel assemblies that engage with and draw power from a rail assembly that is connected to an electrical power supply and that is located at or under the surface on which the vehicle is traveling, thereby presenting a significant hazard.

Andre '717 describes a mechanism for protecting people from the powered elements of the rail assembly by enclosing or covering the rail assembly with a flexible linear closure that is opened for passage of the vehicle by closure opening elements that are mounted to or part of a guidance assembly unit on the vehicle. The guide rail assembly includes a guide rail and two power conductor elements that extend parallel to the guide rail and the guidance assembly unit on the vehicle includes and supports the guide wheels that bear upon and are guided by the guide rail and two power collectors that contact the power conductor elements of the guide rail assembly to provide power to the vehicle from the power conductor elements of the guide rail assembly.

According to Andre '717, see column 4, lines 55-63 for example, at least the power conductor element of the guide rail assembly that is powered, as opposed to being neutral or grounded, is segmented and electrical power is supplied to each segment of the segmented power conductor element *only when the vehicle's guidance assembly unit is in contact with that segment of the guide rail assembly*. Stated in the reverse, the segments of the segmented power conductor that are not currently in contact with the guidance assembly unit are not

provided with power, thereby reducing or eliminating the risk that pedestrians will come into contact with the powered conductor element.

The Examiner states with regard to Andre `717 that this reference "implicitly" monitors the segmented rail and that "[s]ince the vehicle is supplied with power in this manner from a live supply rail to a return grounded rail, the vehicle is at all times grounded, which will provide passengers inside the vehicle with protection from electrocution as well as outside pedestrians". The Applicant respectfully disagrees with the Examiner's findings and conclusions, in view of the following reasons, regarding the teachings allegedly found in Andre `717.

First, the Examiner states that Andre `717 "implicitly" monitors the segmented rail, while at the same time admitting that "Andre does not go into detail concerning the circuitry required to form a current passage detector/safety loop". The Applicant concurs with the Examiner that Andre `717 lacks any teaching pertaining to circuitry to form a current passage detector/safety loop. It must be noted, however, that Andre `717 lacks any such teaching because Andre `717, in complete contrast from the present invention, is not concerned with and does not in any way or to any degree address or consider the state or quality of any connections between the vehicle and either the powered conductor element or the ground conductor element of the guide rail assembly. Andre `717 instead, and again in complete contrast from the present invention, merely assumes that all electrical contacts between the vehicle and the powered and ground rails of the guide rail assembly, including the ground connections and contacts, are correctly functioning and that there are no problem with any of the electrical connections.

As is readily and clearly apparent from Andre `717, therefore, Andre `717 accordingly does not teach, suggest or even hint about any means by which the system could monitor or test any portion of the guide rail assembly or the electrical contacts between guidance assembly unit and any part of the guide rail assembly and does not describe any way in which the guide rail assembly, the guidance assembly unit or the contacts therebetween could be monitored or tested and, for these reasons, does not describe any form of monitoring circuit or current loop involving either of the conductor elements.

It must also be noted that Andre `717, in fact, does not address or consider connections or contacts between the vehicle guidance assembly unit and the ground conductor element of the guide rail assembly at all, but is solely concerned with the powered ground conductor element of the guide rail assembly. In this regard, Andre `717 only states, such as at column 4, lines 55-64 and column 6, lines 41-52, that the power supply conductor is segmented and that electrical power is supplied to each segment of the segmented power supply conductor element

only when the vehicle's guidance assembly unit is in contact with that segment of the guide rail assembly. Again, therefore, Andre `717 does not address or consider the connections or contacts between the guidance assembly unit and the ground conductor element at all, but apparent merely assumes that all required ground connections and contacts are correctly functioning and that there are no problem with any of the electrical connections.

In complete and fundamental contrast from Andre `717, however, the present invention explicitly pertains to the monitoring of the ground connection between a vehicle and a ground rail, and that the current monitoring loop and current detector of the present invention pertains entirely to the vehicle ground connections.

Further considering the teachings of Andre `717 with regard to the Examiner's allegation that Andre `717 somehow "implicitly" monitors the segmented rail, it must be noted that Andre `717 states only, such as at column 4, lines 55-64 and column 6, lines 41-52, that the power supply conductor is segmented and that electrical power is supplied to each segment of the segmented power supply conductor element only when the vehicle's guidance assembly unit is in contact with that segment of the guide rail assembly. It is clear, therefore, that Andre `717 is addressing only the powered conductor of the guide rail assembly and does not address or consider the ground rail connections or contacts at all.

It is, therefore, apparent that, in so far as Andre `717 could be said, purely for the purposes of discussion and without any express or implied admission, concession and/or agreement on the part of the Applicant, to perform any form of "implicit" monitoring of the guide rail assembly, it is clear that any such monitoring involves only the segmented powered rail conductor and does not pertain in any way to the ground rail or the connections to the ground rail.

In addition, Andre `717 does not in fact even describe, suggest or hint at how the system could monitor, detect and/or indicate which segment or segments of the segmented power conductor element are currently in conductive contact with the guidance assembly unit and thus should be provided with power. It is therefore apparent that this "implicit" monitoring alleged by the Examiner is not, in fact, a teaching of any form under the requirements and provisions of either or both of 35 U.S.C. § 103 and 35 U.S.C. § 102 but is only a statement of a wished for capability that Andre `717 either does not or is incapable of actually describing. Again, it is respectfully submitted that Andre `717 does not, in fact, have any teachings pertaining to the monitoring of any of the conductors of the guide rail assembly or the guidance assembly unit or any teachings, suggestions or hints of how contacts between these elements could be monitored.

Next considering the Examiner's statement that "[s]ince the vehicle is supplied with power in this manner from a live supply rail to a return grounded rail, the vehicle is at all times grounded, which will provide passengers inside the vehicle with protection from electrocution as well as outside pedestrians", it is also apparent from a careful reading of Andre `717 that this allegation is also not supported by the teachings in Andre `717 and, in fact, represents a misunderstanding of the teachings in Andre `717.

For example, Andre `717 explicitly describes the system only in terms of providing protection for pedestrians that might otherwise come into contact with the guide rail assembly, and does not even address or discuss the question of protection of the passengers on the vehicle. Even more significantly, Andre `717 explicitly and clearly describes that the Andre `717 system switches power on and off only to the powered segments of the guide rail assembly, and so that only the segment of the guide rail assembly that is in contact with the guidance assembly unit of the vehicle is provided with electrical power. It is, therefore, apparent that while power is switched off to the segments not in contact with the guidance assembly unit, that is, to the segments that pedestrians might come into contact with, power is always provided to the vehicle, which contains the passengers. As such, and as in fact described by Andre `717, Andre `717 provides protection only for pedestrians and does not provide protection for passengers on the vehicle.

Further in this regard, the Examiner states that the passengers are protected because the vehicle is always connected to the grounded conductor element of the guide rail assembly. This is in fact a mistaken conclusion as the Andre `717 ground connection does not provide any form of protection as provided by the present invention.

That is, it is clearly described in the present Application that one of the hazards of electrically driven public transportation vehicles, and in fact the specific hazard addressed by the present invention, is that the connection between the vehicle and the ground rail may deteriorate to the point of presenting a significant risk of shock or outright electrocution to the passengers on the vehicle. It is also clear that the Andre `717 system would likewise be subject to such failures, but that Andre `717 does not address, much less propose a remedy, for this type of failure.

That is, although the Andre `717 vehicle is always supposedly connected to the ground rail, it is clear that, as taught in the present Application and only in the present Application, the connection may deteriorate to the point of being a hazard to the passengers. That is, to the point where the ground connection is not in fact a low resistance ground connection but is instead a relatively high resistance connection that would allow at least parts of the vehicle to

be at significant voltage levels. The Andre `717 system does not provide any protection against this risk situation, however, because the power switching suggested but not actually described by Andre `717 operates so that power is always provided to the vehicle regardless of the condition of any ground connections. In this regard, and as discussed above, it must be noted that the Andre `717 system does not include, in complete contrast from the present invention, any means either for monitoring the ground connection or for cutting power to the vehicle if the ground connection is in an unacceptable condition. As discussed above, the Andre `717 system instead *operates only to insure that power is supplied to the vehicle while*, at the same time, *insuring that those sections of the powered rail conductor element not in contact with the vehicle's guidance assembly unit are not powered*. It is respectfully submitted that the present invention is completely distinguished over and from Andre `717 for a number of fundamental reasons.

For example, and as discussed above, Andre `717 does not address and is not concerned with the protection of passengers on a vehicle or with the quality of a ground connection between the vehicle and a ground rail, or even ground connections at all. In complete and fundamental contrast from the present invention as recited in the claims, Andre `717 is solely concerned with preventing contact between pedestrians and the powered rail element of a guide rail assembly by covering the guide rail assembly in all segments not occupied by the vehicle and by switching power on to only the powered rail segments actually contacted by the guidance assembly unit of the vehicle.

Considering the fundamental distinctions between the present invention and Andre `717 in further detail, it is apparent that the present invention is completely and fundamentally distinguished from Andre `717 by being directly to entirely different subject matter than that disclosed and taught by Andre `717. In particular, and in complete contrast from Andre `717, the present invention is directed to a means for monitoring the ground connections between a vehicle and a ground rail and protecting the vehicle passengers by cutting power to the vehicle when a ground connection is unsatisfactory.

In complete contrast from the present invention as recited in claim 14, Andre `717 does not attempt to monitor the quality of a connection between a vehicle ground and the grounded rail, does not attempt to determine whether the vehicle is grounded for safety purposes, does not even suggest the use of a safety loop or a current detector to monitor a ground connection and, in general, is not involved in any way with safety issues involving grounding of the elements of the vehicle that might contact a passenger. In fact, Andre `717 not only does not describe, suggest or even hint at any means for monitoring connections between the vehicle

and a ground rail, or even the need for monitoring contacts between a vehicle and a ground rail, Andre `717 does not even teach, suggest or hint at any means of monitoring connections between a vehicle and even the powered rail of a guide rail assembly, which is the subject matter of concern in Andre `717.

It must also be noted in fundamental distinction between Andre `717 and the present invention, that the Andre `717 system requires the use of segmented rails while the system of the present invention does not require segmented rails and is in fact perfectly capable of full and correct operation with continuous rails.

In still further fundamental distinction between the present invention and Andre `717, it must be noted that according to the present invention the entire protection device is contained within the vehicle and does not require and does not involve any active elements or components outside the circuitry contained within the vehicle. According to the Andre `717 system, and in complete and basic contrast from the system of the present invention, major components of the system, and in particular the elements of the system that are engaged in switching power to the rail segments and that must, as a consequence, include some otherwise undescribed means for detecting which segments should receive power, are and must be located externally to the vehicle, which further illustrates other fundamental distinctions between the present invention and teachings and disclosure of Andre `717.

It is, therefore, the Applicant's position that Andre `717 does not in any way teach or suggest the present invention as recited in claim 14 to those of ordinary skill in the arts under the provisions of either 35 U.S.C. § 102 and/or 35 U.S.C. § 103 for the reasons discussed above. It is further the Applicant's position that because claims 15-27 all, directly or indirectly, depend from independent claim 14 and thereby incorporate all recitations and limitations of claim 14, claims 15-27 are fully and patentably distinguished over Andre `717 for the same reasons that claim 14 is fully distinguished over Andre `717. The Applicant, therefore, respectfully requests that the Examiner reconsider and withdraw all rejections of claims 14-27 in view of Andre `717 under either 35 U.S.C. § 102 and/or 35 U.S.C. § 103.

Next considering the teachings of Musachio `285, this reference relates to an electrically powered vehicle that is powered from and guided by a single segmented rail and includes two sets of vehicle electrical power/ground contact elements that are spaced apart along the vehicle to contact rail segments that are successively connected to ground and to a power source by corresponding switching controllers as the vehicle travels along the rail segments.

The two sets of vehicle contact elements and the rail segments are arranged so that a first set of the vehicle contact elements engages a first group of one or more sequential rail

segments to receive electrical power from the first group of sequential rail segments and the second set of vehicle contact elements engages a second and different set of one or more sequential rail segments that are connected to ground. During operation, most of the rail segments are connected to ground by corresponding segment switching controllers, thereby protecting pedestrians from electrical shocks. The first group of sequential rail segments, however, are connected to a power source by the corresponding segment switching controllers, thereby providing electrical power to the vehicle through the first set of vehicle contact elements.

The vehicle indicates the location of the vehicle along the rail segments and thus the locations of the first and second sets of vehicle contact elements along the rail segments to the segment switching controllers by transmitting a signal to the switching controllers through the second set of vehicle contact elements and onto the rail segments currently contacted by the second set of vehicle contact elements. The signal is received by the switching controllers from the rail segments currently in contact with the second set of vehicle contact elements, which thereby informs the switching controller which of the rail segments are currently in contact with the first set of vehicle contact elements and thereby currently comprise the first group of sequential rail segments. The switching controllers then connect the group of sequential rail segments currently comprising the first group of rail segments to the power source to thereby provide electrical power to the vehicle through the first set of vehicle contact elements while the second group of rail segments continues to provide a ground contact to the vehicle through the second set of vehicle contact elements.

As the vehicle travels along the rail, therefore, the switching controllers will detect and respond to the progressive movement of the segment location signal transmitted onto the moving group of segments currently forming the second group of rail segments by switching the ground/power source connections of the similarly moving group of rail segments currently forming the first group of rail segments. As such, the first set of vehicle contact elements will *always* be in contact with rail segments connected to the power source and the second set of vehicle contacts will *always* be in contact with rail segments connected to ground. In this regard, it must be noted that only the first group of rail segments, that is, the group of one or more sequential rail segments that are to provide power to the vehicle through the first set of vehicle contact elements, must be switched as the vehicle changes location along the rail segments, and that all other rail segments are connected to ground.

It is, therefore, apparent that there are a number of fundamental distinctions between the present invention and the teachings of Musachio `285. First, however, considering the

Examiner's analysis of the teachings of Musachio `285, the Examiner first states that "[t]his is a safety circuit/loop because in the absence of a vehicle, rail segment 20 is grounded, making it safe for pedestrians". The Applicant respectfully disagrees with the Examiner for the following reasons.

First, the Examiner's allegation has nothing to do with the present invention because, as the Examiner repeatedly ignores, the present invention is directed to an apparatus for protecting the *passengers* on an electrically powered vehicle and not to the protection of some *pedestrians* that are not on the vehicle and that may not even be in the general vicinity of the vehicle.

Secondly, the present invention is directed to a protection mechanism that includes a *safety loop and current detection circuit that are located in the ground circuit of the vehicle* and that activates to cut of power to the vehicle when it actively detects in incorrect level of current in the ground loop. What the Examiner alleges is a "safety circuit/loop" in the Musachio `285 system is not a safety circuit and, in fact, is not a loop or circuit of any form and is not involved in any way in the ground circuit of the vehicle or even with the vehicle as a whole. Instead, the operation in Musachio `285 referred to by the Examiner is merely a passive state of the Musachio `285 rail system wherein all of the switching controllers are in their inactive state and allow the rail segment switches to passively connect the rail segments to ground unless the switch controllers are activated by the actual presence of a vehicle.

The Examiner's statement is therefore the logical equivalent of stating that turning off a power switch so that there is no power to shock someone who is not even in the vicinity of the system is equivalent to an active mechanism that monitors the conditions of a system to shut the system down when a hazard condition is detected to thereby avoid shocks to a person actually using the system.

Thirdly, it must be noted that Musachio `285 does not, in fact, describe the operation referred to by the Examiner as Musachio `285 does not describe or even suggest any form of safety circuit or loop, and that the operation as described by the Examiner has no relevance at all to the vehicle itself or the safety of passengers on the vehicle but is pertinent only to pedestrians, that is, persons not riding on the vehicle and in fact not associated with the vehicle at all.

It is, therefore, apparent and the Applicant's position that the above discussed statement by the Examiner is not only unsupported by Musachio `285, but is also essentially irrelevant to the subject matter of the presently claimed invention.

Further in regard to the above discussed statement by the Examiner, the Examiner also states that "unsatisfactory electrical contact has the same effect as the absence of an electrical vehicle, which causes rail segment 20 to be grounded for pedestrian safety". In this statement, the Examiner is obviously attempting to equate the operation of the Musachio `285 system with the functioning of the present invention in the case of an unsatisfactory ground connection.

First, it must be noted that Musachio `285 does not address or consider or have any teachings that address or are concerned, in any way, with unsatisfactory ground connections between the vehicle and the rail segments, or unsatisfactory connections of any type between the vehicle and the rail segments. Musachio `285, like Andre `717, assumes that all connections between the vehicle and the rail, including both ground and power connections, are present and satisfactory and not only does not suggest unsatisfactory connections could even be possible, much less what to do if there is in fact an unsatisfactory connection.

The only reference to unsatisfactory ground connections between a vehicle and a rail system, or to apparatus for dealing with such unsatisfactory ground connections, is found in the disclosure and the claims of the present Application and the Examiner is apparently incorporating teachings from the pending disclosure and/or claims of the present Application into the cited prior art reference which, as well known, is not permissible.

In addition, it must be noted that the present invention would still be fully and fundamentally distinguished over and from Musachio `285 for the same reasons as just discussed above. That is, and firstly, the Examiner's allegation has nothing to do with the present invention because, as the Examiner repeatedly ignores, the present invention is directed to an apparatus for *protecting the passengers on an electrically powered vehicle* and not to the protection of some pedestrians that are not on the vehicle and that may not even be in the general vicinity of the vehicle.

Secondly, and again, the present invention is directed to a protection mechanism that includes a safety loop and current detection circuit that are located in the ground circuit of the vehicle and activate to cut of power to the vehicle when it actively detects an incorrect level of current in the ground loop. What the Examiner claims is a "safety circuit/loop" in the Musachio `285 system is not a safety circuit at all and, in fact, is not a loop or circuit of any form and is not involved in any way in the ground circuit of the vehicle or even with the vehicle as a whole. Instead, the type of operation proposed by the Examiner, that is, the present of an unsatisfactory ground connection, is merely the passive state of the Musachio `285 rail system wherein all of the switching controllers are in their inactive state and allow the rail segment

switches to passively connect the rail segments to ground unless the switch controllers are activated by the actual presence of a vehicle, and is totally unrelated to the present invention.

Thirdly, and again, Musachio '285 does not, in fact, describe the operation referred to by the Examiner as to any form of safety circuit or loop or that the operation has any relevance at all to the vehicle itself or the safety of passengers on the vehicle. It is therefore apparent and the Applicant's position that the above discussed statement by the Examiner is not only unsupported by Musachio '285, but is also essentially irrelevant to the subject matter of the present invention.

Next, the Examiner states that either microprocessor 99 shown in FIG. 6 of Musachio '285 or control circuit 238 shown in FIG. 7 of Musachio '285 is a current passage detector and is connected to the above discussed safety loop and detects a current flowing in the safety loop and furnishes a signal indicating whether the safety loop is one open or closed. Again, the Applicant respectfully disagrees with the Examiner's alleged teachings purportedly found in Musachio '285 for the following reasons.

First, it is the Applicant's position that the citing of two elements in the prior art reference, that is, the microprocessor 99 and the control circuit 238, as possibly being equivalent to a claimed element is not only indefinite in itself, but is a clear illustration that the alleged teaching is so vague or so far off point, or no teaching at all, that the Examiner cannot in fact tell which is closest to the claimed element, and is this an improper rejection.

In addition, the two cited elements, that is, the microprocessor 99 and the control circuit 238, have functions that are both very different from each other so that one is not in any an equivalent or alternative to the other, and both are very different from the elements of the present invention, so that neither is a valid teaching with respect to the presently claimed invention.

For example, Musachio '285 explicitly and clearly describes, at column 7, lines 28-34, that "Fig. 6 is a block diagram schematically illustrating vehicle speed and trolley control for a vehicle using D.C. power. A microprocessor 99 is responsive to a trolley actuator 100, an accelerator 104 and brakes 102 for generating selected control signals for a power controller 105 and an RF generator 106". It is, therefore, apparent that the microprocessor 99 is not and has nothing to do with "a current passage detector and is connected to the above discussed safety loop and detects a current flowing in the safety loop and furnishing a signal indicating whether the safety loop is one open or closed" but is instead the primary vehicle speed/brake controller that responds to an accelerator and brake to control the motion of the vehicle.

Further in this regard, Musachio '285 explicitly and clearly describes at, for example, column 7, lines 61 to column 8, line 21, for example, that control circuit 238 is a part of the switching controllers that are associated with each rail segment and detect the segment location signal transmitted from the vehicle to switch the corresponding rail segment between ground and the power source. Control circuits 238 are, therefore, not even part of the vehicle or the circuitry of the vehicle but are instead completely exterior to the vehicle, being directly and physically and functionally associated with the rail segments, and have no relationship of any kind or form with any form of a current passage detector or safety loop and does not, in any way, detect any form of current flowing in a safety loop and does not generate any form of signal indicating that a safety loop is open or closed.

Moreover, it is respectfully submitted that control circuits 238 are not any form of a current detector, but instead detect an RF signal transmitted from the vehicle onto the grounds segments of the group of segments currently forming the second ground of rail segments. Therefore, not only do control circuits detect an entirely different type of signal, that is, an RF signal rather than measuring current levels, but control circuits do so for an entirely different purpose. More specifically, the current loop and current detector of the present invention *measure the quality of the ground contact* between the vehicle and the ground rail. The RF signal and control circuits 238, however, do not measure the *quality* of any form of contact, but instead serve to detect and indicate the location of the vehicle along the rail and which groups of rail segments currently comprise the first and second groups of rail segment. Control circuits 238, therefore detect an entirely different type of signal from the circuitry of the present invention and do so for an entirely different purpose from that of the presently claimed invention.

It is, therefore, the Applicant's position that the above discussed statement of the Examiner is an indefinite and incorrect citation of a prior art element as corresponding to a claimed element and, if anything clearly show that the prior art teachings cited by the Examiner are in fact too vague to be valid teachings, or are in fact non-existent. It is further the Applicant's position that the Examiner's allegation regarding the relationship of the microprocessor 99 and the control circuit 238 to the present invention is based upon a misinterpretation of the actual teachings in Musachio '285, that the microprocessor 99 and the control circuits 238 have no relationship at all to the present invention, and that the Examiner's statements again rely largely on the Examiner's improper incorporation of teachings from the specification and the claims of the present invention into the teachings of Musachio '285.

Next, the Examiner states that "If power rail 220 is not sensed by hall effect switch 240, then rail 220 is de-energized, and when the electrical contact is unsatisfactory, the signal

causing at least one of safety elements to be engaged (column 7, lines 35-43); if the current collectors break contact with the rail, trolley actuator 100 automatically turns off, which de-energizes RF signal generator 106, which signals the power controllers 38 in FIG. 1 to de-energize rail 21. This creates a safety walkway for pedestrians, as well as effectively grounds the vehicle and thus prevents possible electrocution (column 5, lines 16-20).

In so far as the Applicant can understand this statement of the Examiner, the Applicant assumes that the Examiner is referring to the fact that if the contact between the first group of vehicle contact elements is unsatisfactory, then the RF signal will not be coupled from the vehicle to the ground rail segments presently forming the first group of segments and thus will not be received by the control circuits 238 associated with each of the segments. As discussed above, there is a control circuit 238 and corresponding ground/power switch associated with each rail segment and the control circuit 238 of a given segment will receive the RF signal when the corresponding segment is part of the current first (ground) group of segments. The control circuits 238 of the second (power) group of segments will accordingly be activated to connect the segments of the second group of segments to the power source.

The Applicant further assumes that the Examiner is referring to the fact that if the RF signal is not received by control circuits 238, then the control circuits 238 will disconnect the corresponding rail segments from the power source, so that the rail segments are all grounded and thereby safe for pedestrians.

The Applicant further assumes that the Examiner is stating, possibly as an alternative situation, that if the vehicle contact elements lose contact with the powered rail segments the vehicle circuits will automatically turn off, including the circuit generating the RF signal, thereby leading to the same result. The Examiner again is equating the operation of the Musachio '285 under failure conditions with the fully functioning and proper operation of an entirely different type of system performing an entirely different function in an entirely different manner.

As discussed above, the present invention is directed at a protection mechanism that includes a safety loop and current detection circuit that are located in the ground circuit of the vehicle and that activates to cut off power to the vehicle when it actively detects an incorrect level of current in the ground loop. The Examiner is thereby equating the operation of the system of the present invention when in full and correct operating condition to the operation of the Musachio '285 system under failure conditions. This is equivalent to saying that the fact that a car can not get into an accident if it will not run is equivalent to a driver assistance system that prevents the driver from performing dangerous action and is obviously an improper comparison under either, or both, of 35 U.S.C. § 102 and/or § 103.

Moreover, and even if it were assumed, solely for purposes of discussion and without any express or implied admission, concession or agreement by the Applicant, that there were some combination of circumstances under which the Musachio `285 system could fail to operate properly, and that failure could result in cutting off power to the vehicle, the result still would not teach or suggest the present invention to those of even ordinary skill in the arts under the requirements and provisions of 35 U.S.C. § 103 and/or 35 U.S.C. § 102.

For example, Musachio `285 does not address, consider or have any teachings that address or are concerned with, in any way, an unsatisfactory ground connection(s) between the vehicle and the rail segments, or an unsatisfactory connection(s) of any type between the vehicle and the rail segments. Musachio `285, like Andre `717, assumes that all connections between the vehicle and the rail, including both ground and power connections, are present and satisfactory and not only do not even address or suggest unsatisfactory connections could even be possible, much less what to do if there is an unsatisfactory connection.

The only reference to unsatisfactory ground connections between a vehicle and a rail system, or to apparatus for dealing with such unsatisfactory ground connections, is found only in the pending disclosure and the claims of the present Application and the Examiner is apparently incorporating the specific teachings from the disclosure and the claims of the present Application into the cited prior art references, which is impermissible. If the Examiner disagrees with the Applicant's view concerning the applied references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law.

In addition, it must be noted that the present invention would still be fully and fundamentally distinguished over and from Musachio `285 for the same reasons as just discussed above. That is, and firstly, the Examiner's allegation has nothing to do with the present invention because, as the Examiner repeatedly ignores, the present invention is directed at an apparatus for protecting the passengers on an electrically powered vehicle and not to the protection of some pedestrians that are not on the vehicle and that may not even be in the general vicinity of the vehicle.

Secondly, and again, the present invention is directed at a protection mechanism that includes a safety loop and current detection circuit that are located in the ground circuit of the vehicle and that activates to cut off power to the vehicle when it actively detects an incorrect level of current in the ground loop. What the Examiner alleges to be a "safety circuit/loop" in the Musachio `285 system is not a safety circuit, current loop or safety loop and, in fact,

is not a loop or circuit of any form and is not involved in any way in the ground circuit of the vehicle or even with the vehicle as a whole. Instead, the type of operation proposed by the Examiner, that is, the present of an unsatisfactory ground connection or the failure of power to the vehicle so that the vehicle cannot transmit the RF signal, is merely the passive state of the Musachio `285 rail system wherein all of the switching controllers are in their inactive state and allow the rail segment switches to passively connect the rail segments to ground unless the switch controllers are activated by the actual presence of a vehicle, and is totally unrelated to the presently claimed invention.

Thirdly, and again, Musachio `285 does not, in fact, describe the operation referred to by the Examiner, or any form of safety circuit or loop or that the operation has any relevance at all to the vehicle itself or the safety of passengers on the vehicle.

It is, therefore, apparent and the Applicant's position that the above discussed allegation by the Examiner is not only not supported by Musachio `285, but is also irrelevant to the subject matter of the present invention. It is therefore apparent that the present invention as recited in claim 14, and as thereby recited in dependent claims 15-27, are fully and patentably distinguished over and from the teachings of Musachio `285 for a number of fundamental reasons.

For example, and as discussed above, Musachio `285 does not address and is not concerned with the protection of passengers on a vehicle or with the quality of a ground connection between the vehicle and a ground rail, or even ground connections at all. In complete and fundamental contrast from the present invention as recited in the claims, Musachio `285 is solely concerned with preventing contact between pedestrians and the powered segments of a rail by providing power to only the rail segments directly in contact with the vehicle and switching all other rail segments to ground.

Considering the fundamental distinctions between the present invention and Musachio `285 in further detail, it is apparent that the present invention completely and fundamentally distinguished from Musachio `285 by being directly to entirely different subject matter than Musachio `285 In particular, and in complete contrast from Musachio `285, the present invention is directed to a means for monitoring the ground connections between a vehicle and a ground rail and protecting the vehicle passengers by cutting off power to the vehicle when a ground connection is unsatisfactory while, as discussed above, Musachio `285 is solely concerned with preventing contact between pedestrians and the powered segments of a rail by providing power to only the rail segments directly in contact with the vehicle and switching all other rail segments to ground.

In complete contrast from the present invention as recited in claim 14, Musachio `285 does not attempt to monitor the quality of a connection between a vehicle ground and the grounded rail, does not attempt to determine whether the vehicle is grounded for safety purposes, does not even suggest the use of a safety loop or a current detector to monitor a ground connection and, in general, is not involved in any way with safety issues involving grounding of the elements of the vehicle that might contact a passenger. In fact, Musachio `285 not only does not describe, suggest or even hint at any means for monitoring connections between the vehicle and a ground rail, or even the need for monitoring contacts between a vehicle and a ground rail, Musachio `285 does not even teach, suggest or hint at any means of monitoring connections between a vehicle and even the powered rail of a guide rail assembly, which is the subject matter of concern in Musachio `285.

It must also be noted in fundamental distinction between the present invention and Andre `717 that the Andre `717 system requires the use of segmented rails, while the system of the present invention does not require segmented rails and in fact is perfectly capable of full and correct operation with continuous rails.

In still further fundamental distinction between the present invention and Musachio `285, it must be noted that, according to the present invention, the entire protection device is contained within the vehicle and does not require and does not involve any active elements or components outside the circuitry contained within the vehicle. In the Musachio `285 system, and in complete and basic contrast from the system of the present invention, major components of the system, such as the segmented system of rails and the control circuits 238 and switching elements for each rail segment, are and must be located externally to the vehicle, which further illustrates the other fundamental distinctions between the present invention and Musachio `285.

It is, therefore, the Applicant's position that Musachio `285 does not teach or suggest the present invention as recited in claim 14 to those of ordinary skill in the arts under either 35 U.S.C. § 102 and/or 35 U.S.C. § 103 for the reasons discussed above. It is further the Applicant's position that because claims 15-27 are all directly or indirectly dependent from independent claim 14 and thereby incorporate all recitations and limitations of claim 14, claims 15-27 are fully and patentably distinguished over Musachio `285 for the same reasons that claim 14 is fully distinguished over Musachio `285.

The Applicant, therefore, respectfully requests that the Examiner reconsider and withdraw all rejections of claims 14-27 based upon Musachio `285 under either 35 U.S.C. § 102 and/or 35 U.S.C. § 103. Therefore next considering the combination of Andre `717 in view of Musachio `285, as described above Andre `717 describes a system for protecting pedestrians

wherein an electrically powered rail guided vehicle that includes guide wheel assemblies that engage with and draw power from a segmented rail wherein power is provided only to the rail segments in contact with a vehicle guide wheel assembly and wherein those segments of rail not in contact with the vehicle are covered by a flexible linear enclosure opened by the guide wheel assemblies.

Musachio `285, in turn, describes a system for protecting pedestrians for use with an electrically powered vehicle that is powered from and guided by a single segmented rail wherein the vehicle transmits a signal through the rail segments indicating which rail segments the vehicle is currently in contact with and wherein external power switching elements connect only the segments in contact with the vehicle to a power source while all other segments being switched to ground.

It is, therefore, apparent that Andre `717 and Musachio `285 are sufficiently close in subject matter and operation to permit some combination of the two references. For example, both systems are intended and designed to protect pedestrians from shock from a segmented electrified rail of an electrically powered rail transportation vehicle system. Both system include vehicle elements that contact the rail segments and in both systems power is provided only to the rail segments currently being contacted by the vehicle and the other rail segments, that might be contacted by pedestrians, are one or more of unpowered, connected to ground or covered. Both systems also must include some arrangement for indicating which segments the vehicle is currently in contact with to control the switching on and off of the power segments, with this arrangement being mentioned but not described in Andre `717 and actually described in Musachio `285.

The principle differences between the systems are that the Andre `717 system uses two rails, at least one of which is segmented and provides power to the vehicle, while Musachio `285 employs a single segmented rail that provides both power and ground connections to the vehicle, and the Andre `717 system employs a linear flexible cover for the rail or rails that is opened and closed by the vehicle, so that the rail or rails are always covered except in the region occupied by the vehicle.

A combination of Andre `717 and Musachio `285 would yield either a dual rail system like that taught by Andre `717, but with the addition of the vehicle position indication elements and segment switching elements of the Musachio `285 system or a single rail system like that taught by Musachio `285 but with the addition of the linear, flexible rail cover from the Andre `717 system.

It is also apparent, however, that since neither Andre `717 nor Musachio `285 in any way teaches or suggests the above discussed elements of the present invention as recited in the claims, for the reasons discussed above, the combination likewise cannot and will not teach or suggest the elements of the present invention as recited in the claims. For example, neither Andre `717 nor Musachio `285 nor the combination thereof can or does teach or suggest the protection of passengers of a vehicle or the monitoring of the quality of a ground connection between the vehicle and a ground rail, or even ground connections at all. The present invention is completely and fundamentally distinguished from both Andre `717 and Musachio `285 and the combination thereof by being directed to a means for monitoring the ground connections between a vehicle and a ground rail and protecting the vehicle passengers by cutting power to the vehicle when a ground connection is unsatisfactory. In complete and fundamental contrast from the present invention, Andre `717 and Musachio `285 and any combination thereof are solely concerned with preventing contact between pedestrians and the powered segments of a rail by providing power to only the rail segments directly in contact with the vehicle and switching all other rail segments to ground

In complete contrast from the present invention as recited in claim 14, attempts to or suggests monitoring the quality of a connection between a vehicle ground and the grounded rail. Neither Andre `717 nor Musachio `285, nor any combination thereof, attempts to or suggests determining whether the vehicle is grounded for safety purposes. Andre `717 and Musachio `285 and any permissible combination thereof does not even suggest the use of a safety loop or a current detector to monitor a ground connection and, in general, are not involved in any way with safety issues involving grounding of the elements of the vehicle that might contact a passenger. In fact, Andre `717 and Musachio `285, and any permissible combination thereof, do not describe, suggest or even hint at any means for monitoring connections between the vehicle and a ground rail, or even the need for monitoring contacts between a vehicle and a ground rail, Andre `717 and Musachio `285, and any permissible combination thereof, do not even teach, suggest or hint at any means of monitoring connections between a vehicle and even the powered rail of a guide rail assembly.

It must also be noted in fundamental distinction between the present invention and Andre `717 and Musachio `285, and any permissible combination thereof, is that any system resulting from Andre `717 and Musachio `285 and or combination thereof requires the use of segmented rails, while the system of the present invention does not require segmented rails and is in fact perfectly capable of full and proper operation with continuous rails.

In still further fundamental distinction between the present invention and Andre `717 and Musachio `285, and any permissible combination thereof, it must be noted that in the present invention the entire protection device is contained within the vehicle and does not require and does not involve any active elements or components outside the circuitry contained within the vehicle. In any system resulting from Andre `717 or Musachio `285, or any permissible combination thereof, and in complete and basic contrast from the system of the present invention, major components of the resulting system, such as the segmented system of rails and the control circuits 238 and switching elements for each rail segment, are and must be located externally to the vehicle, which further illustrates the other fundamental distinctions between the present invention and Andre `717 and Musachio `285 and any combination thereof.

It is therefore the Applicant's position that Andre `717 and Musachio `285, and any permissible combination thereof, does not in any way teach or suggest the present invention, as recited in claim 14, to those of ordinary skill in the arts under either 35 U.S.C. § 102 and/or 35 U.S.C. § 103 for the reasons discussed above. It is further the Applicant's position that because claims 15-27 are all directly, or indirectly, dependent from independent claim 14 and thereby incorporate all recitations and limitations of claim 14, claims 15-27 are fully and patentably distinguished over Andre `717 and Musachio `285 and any combination thereof for the same reasons that claim 14 is fully distinguished over Andre `717 and Musachio `285 and any combination thereof. The Applicant, therefore, respectfully requests that the Examiner reconsider and withdraw all rejections of claims 14-27 based upon Andre `717 and Musachio `285 and any combination thereof under either 35 U.S.C. § 102 and/or 35 U.S.C. § 103.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejection(s) should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the Andre `717 and/or Musachio `285 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating

the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejection(s) should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,

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